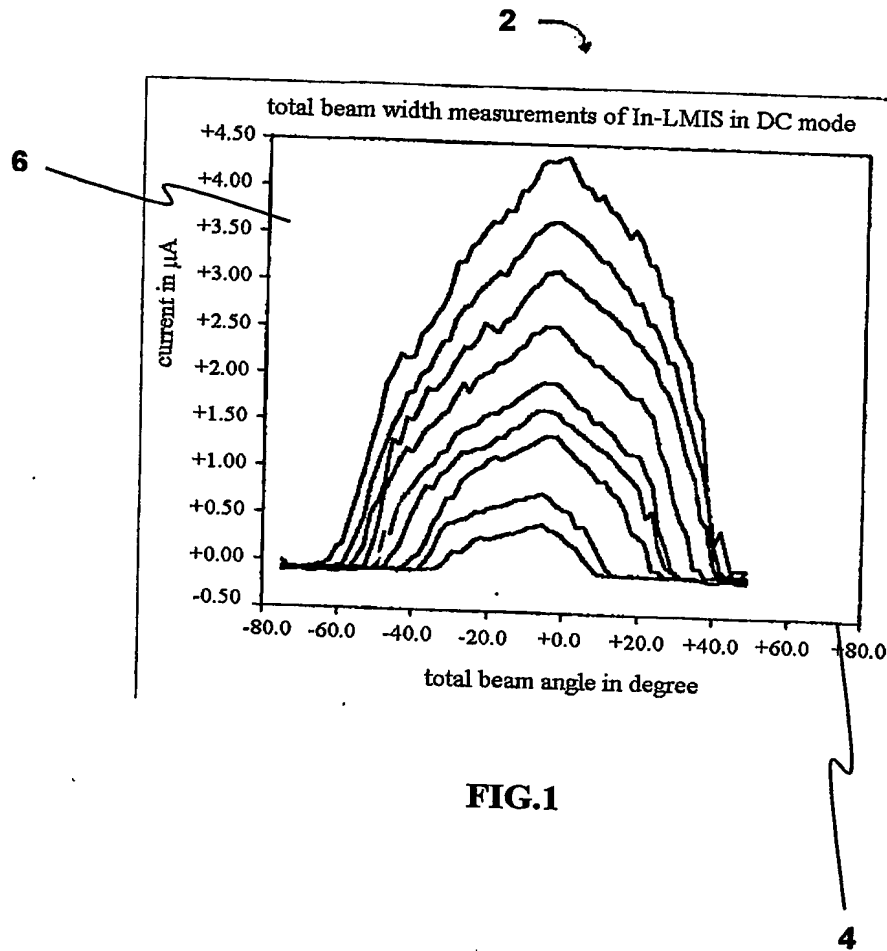


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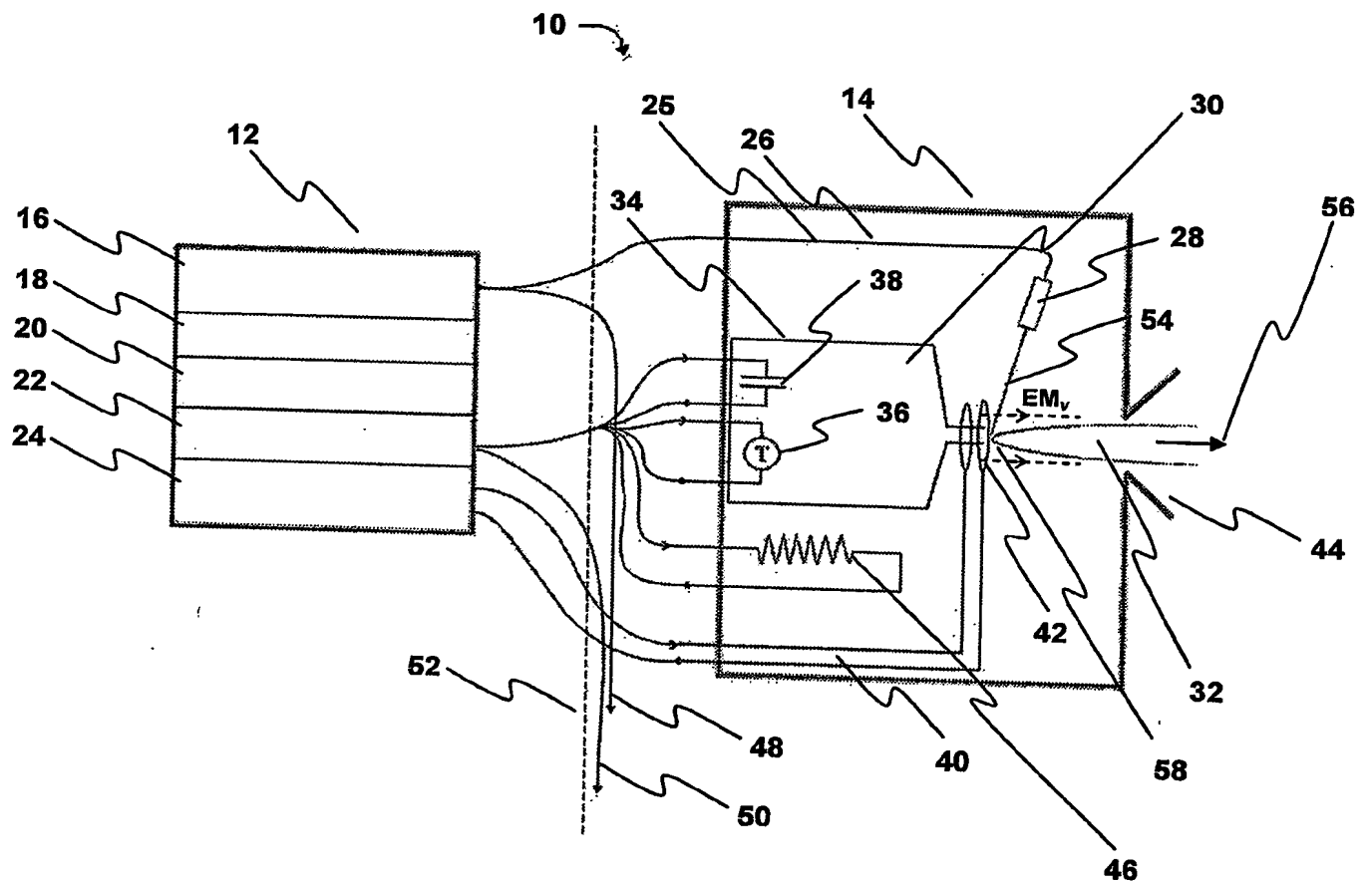


FIG. 2

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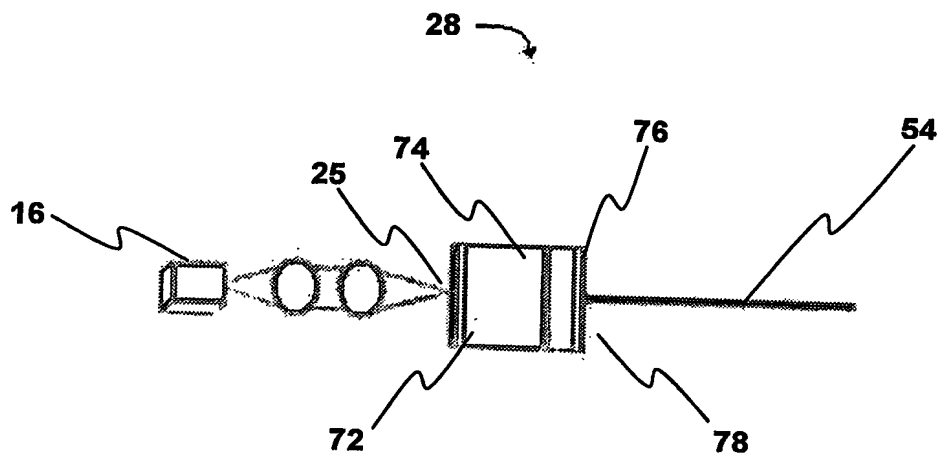


FIG. 3

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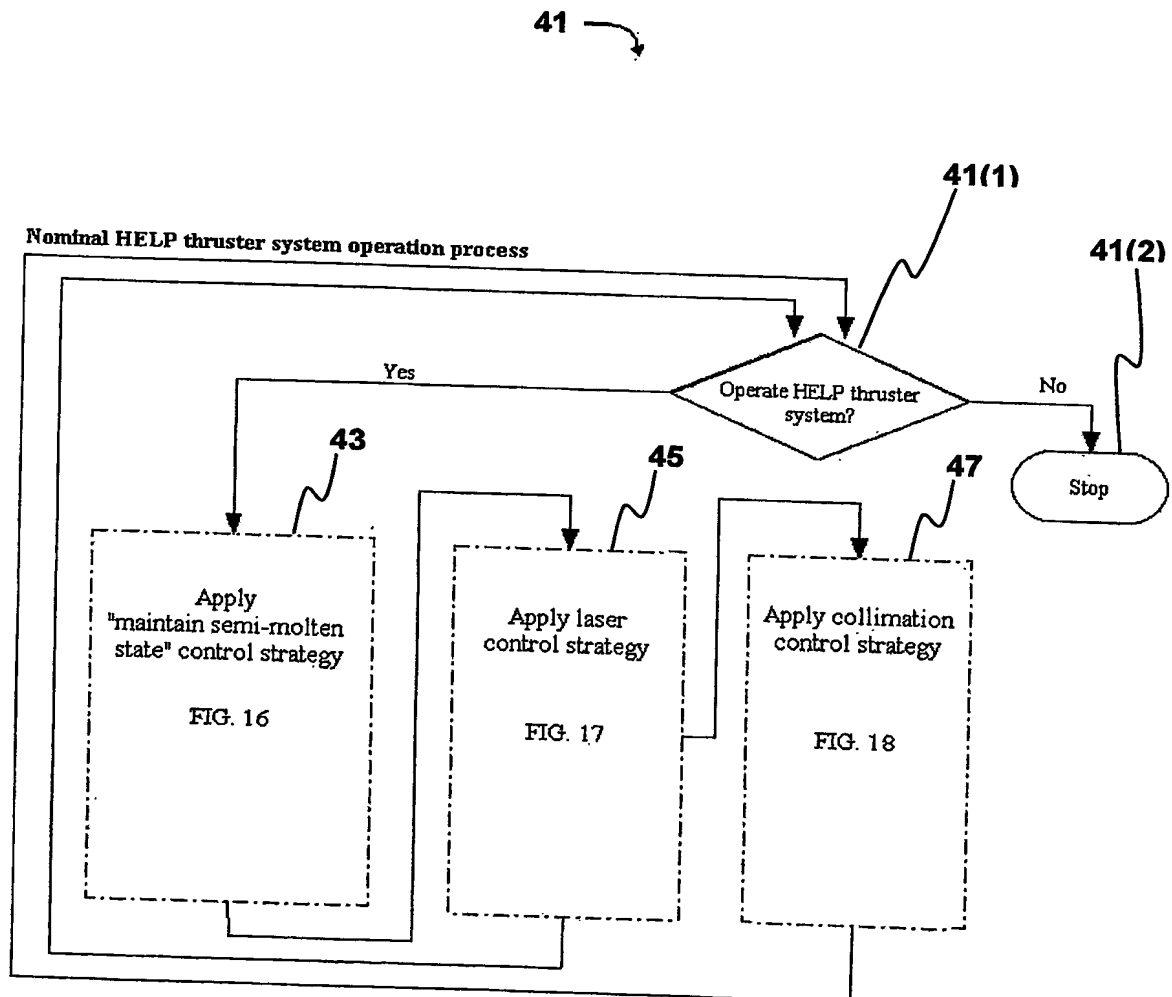


FIG. 4

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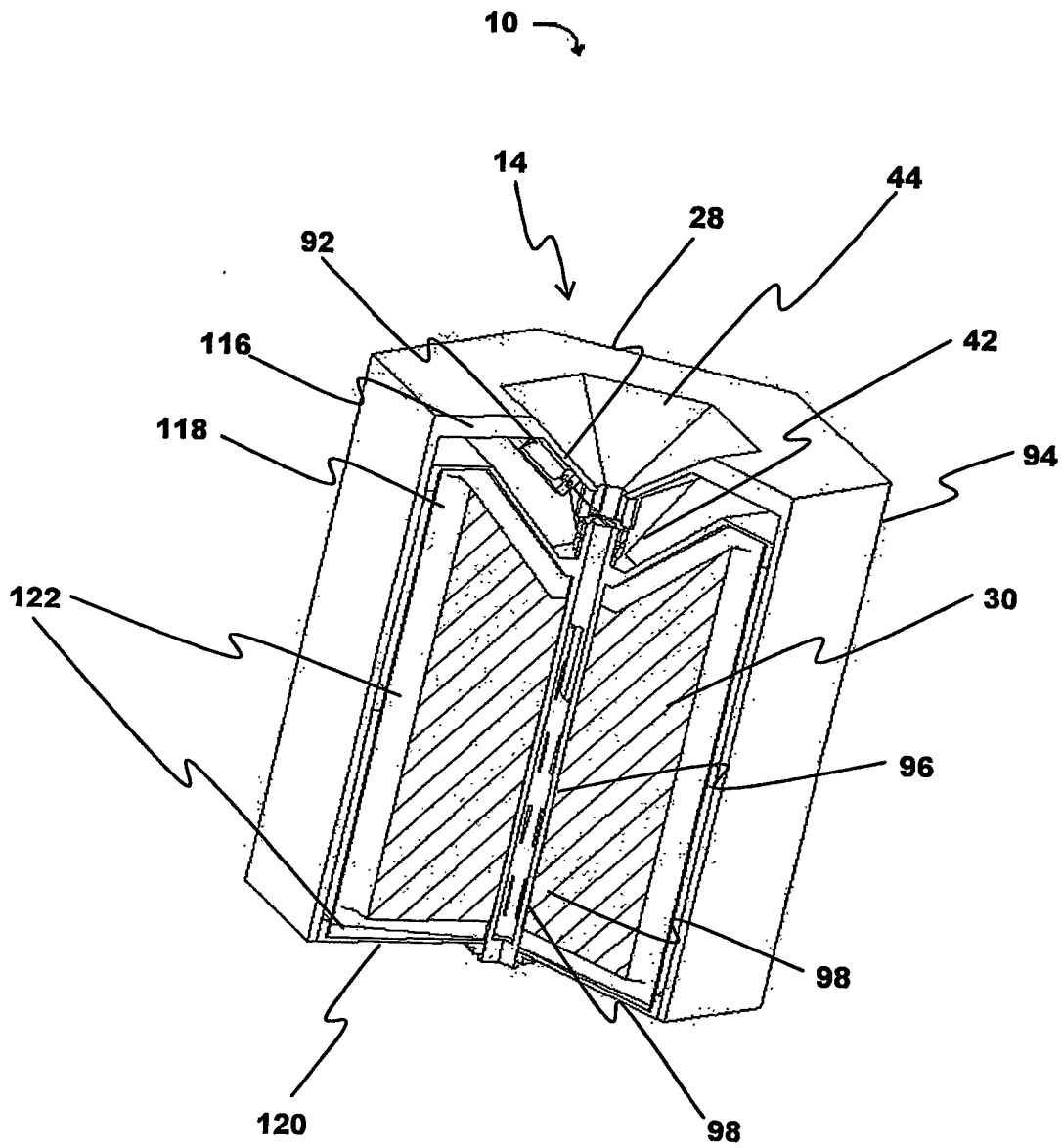


FIG. 5

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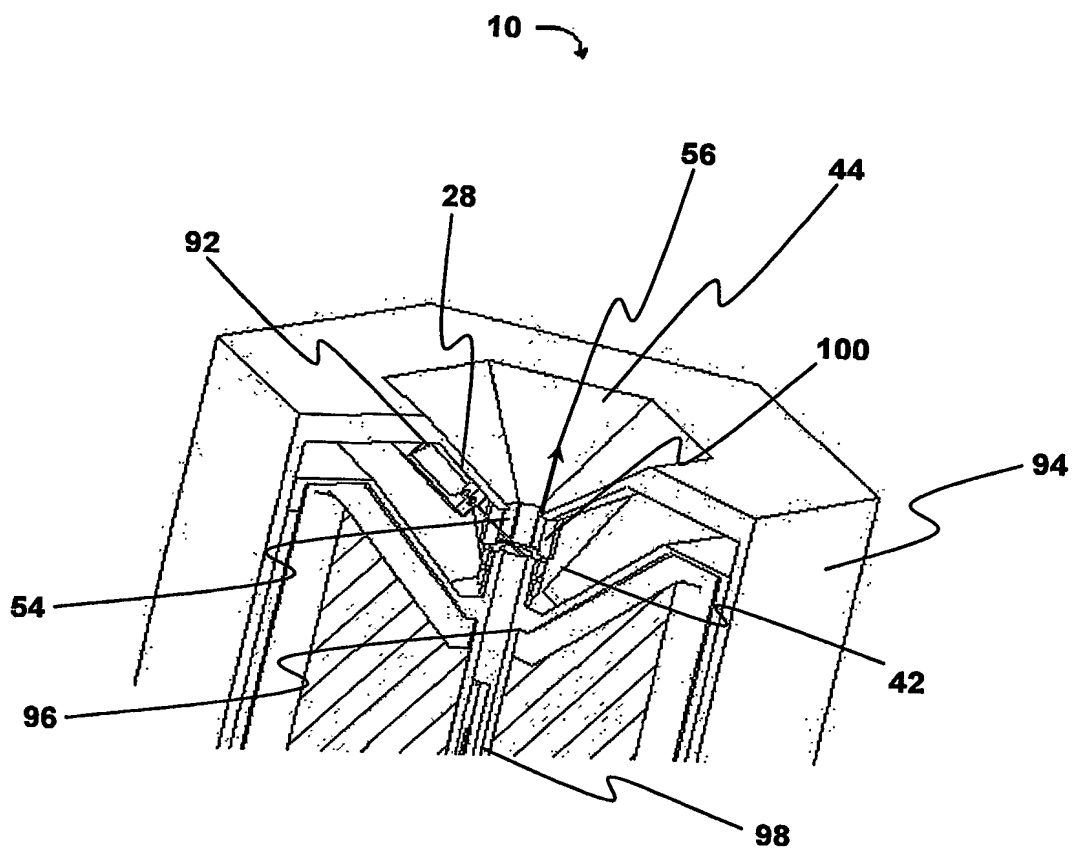


FIG. 6

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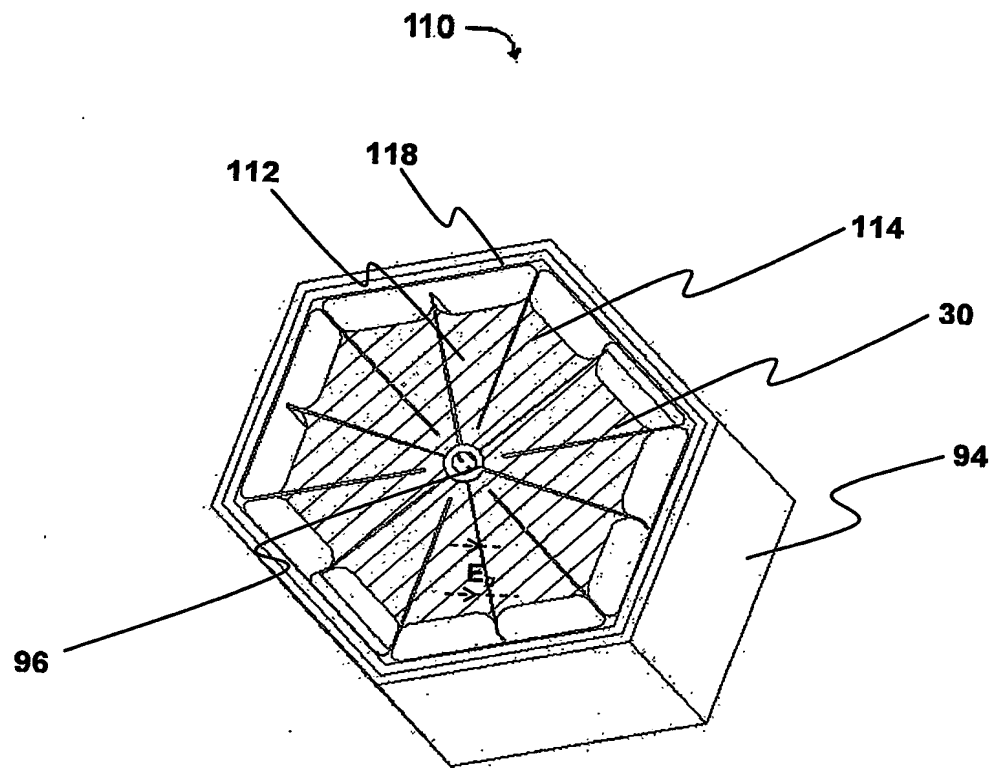


FIG. 7

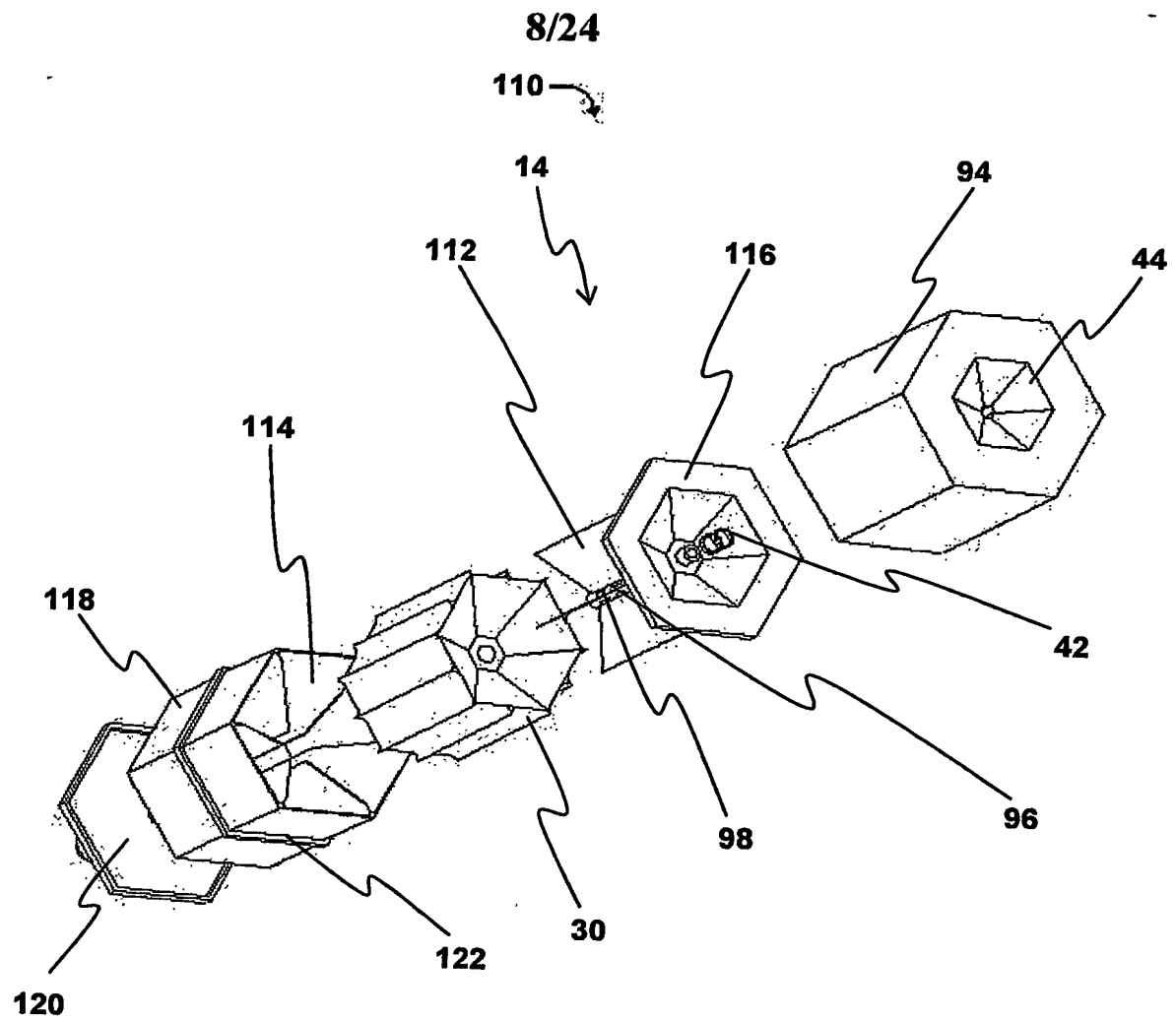


FIG. 8

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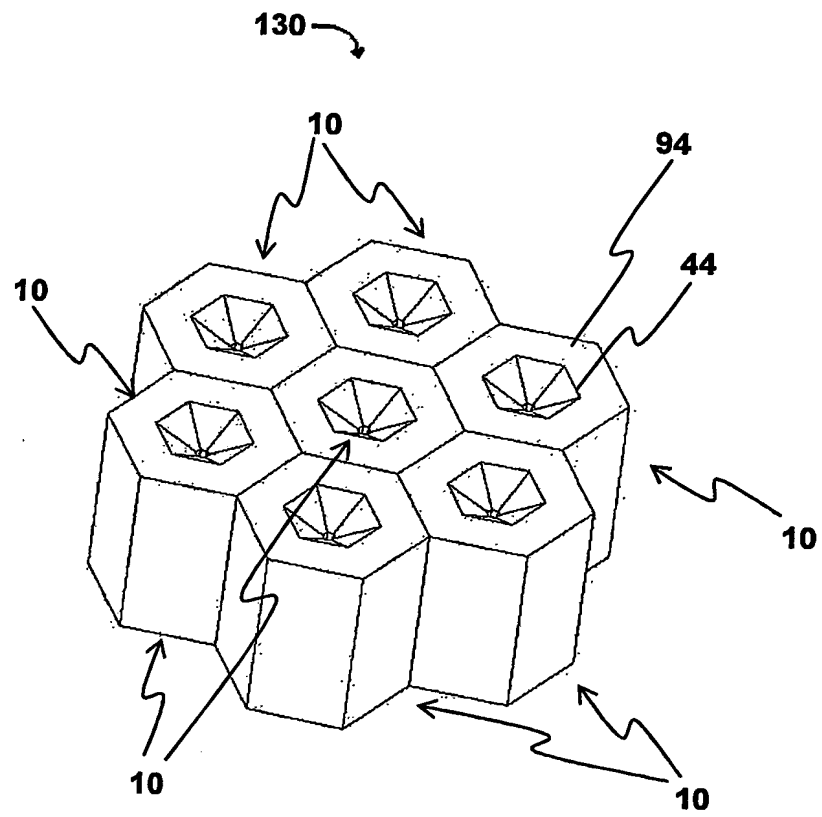


FIG. 9

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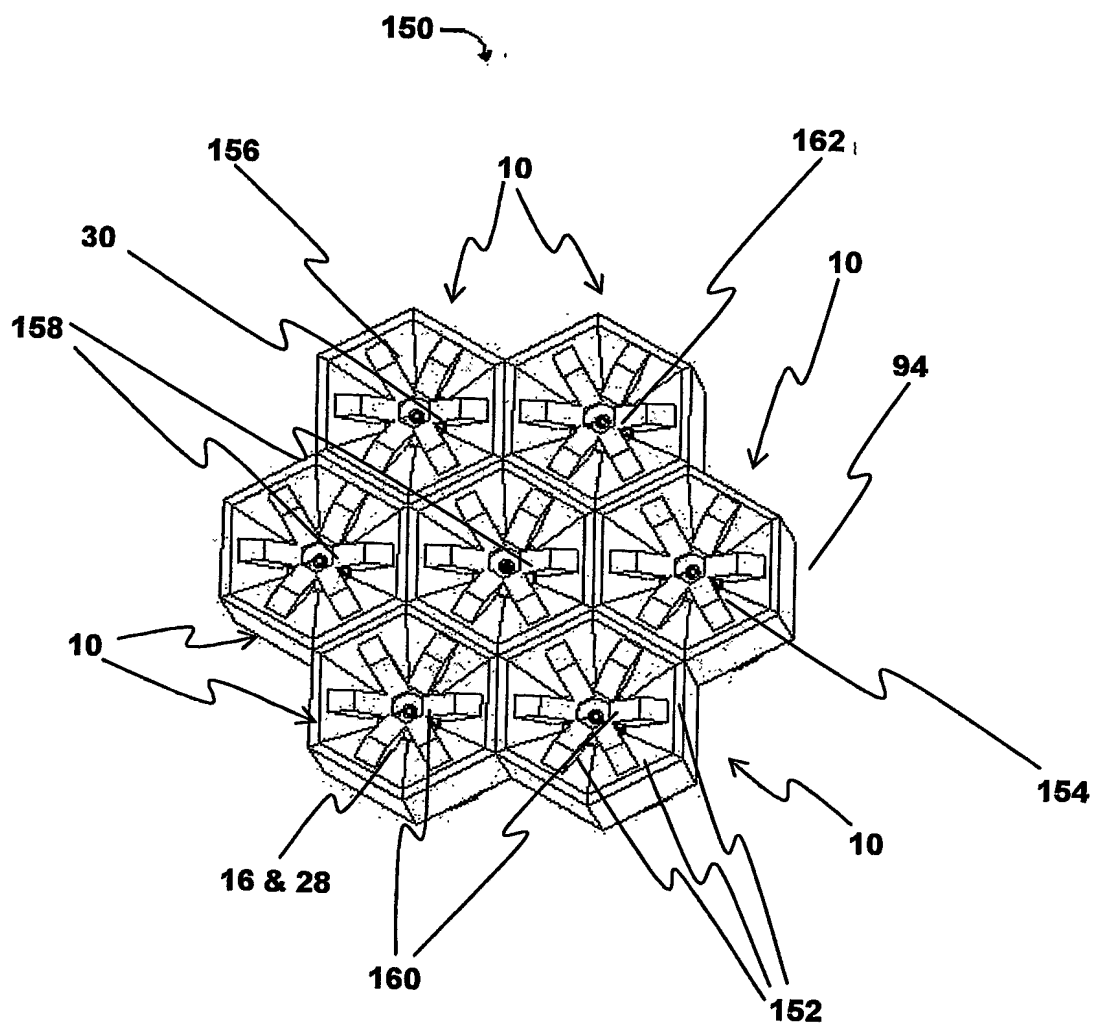


FIG. 10

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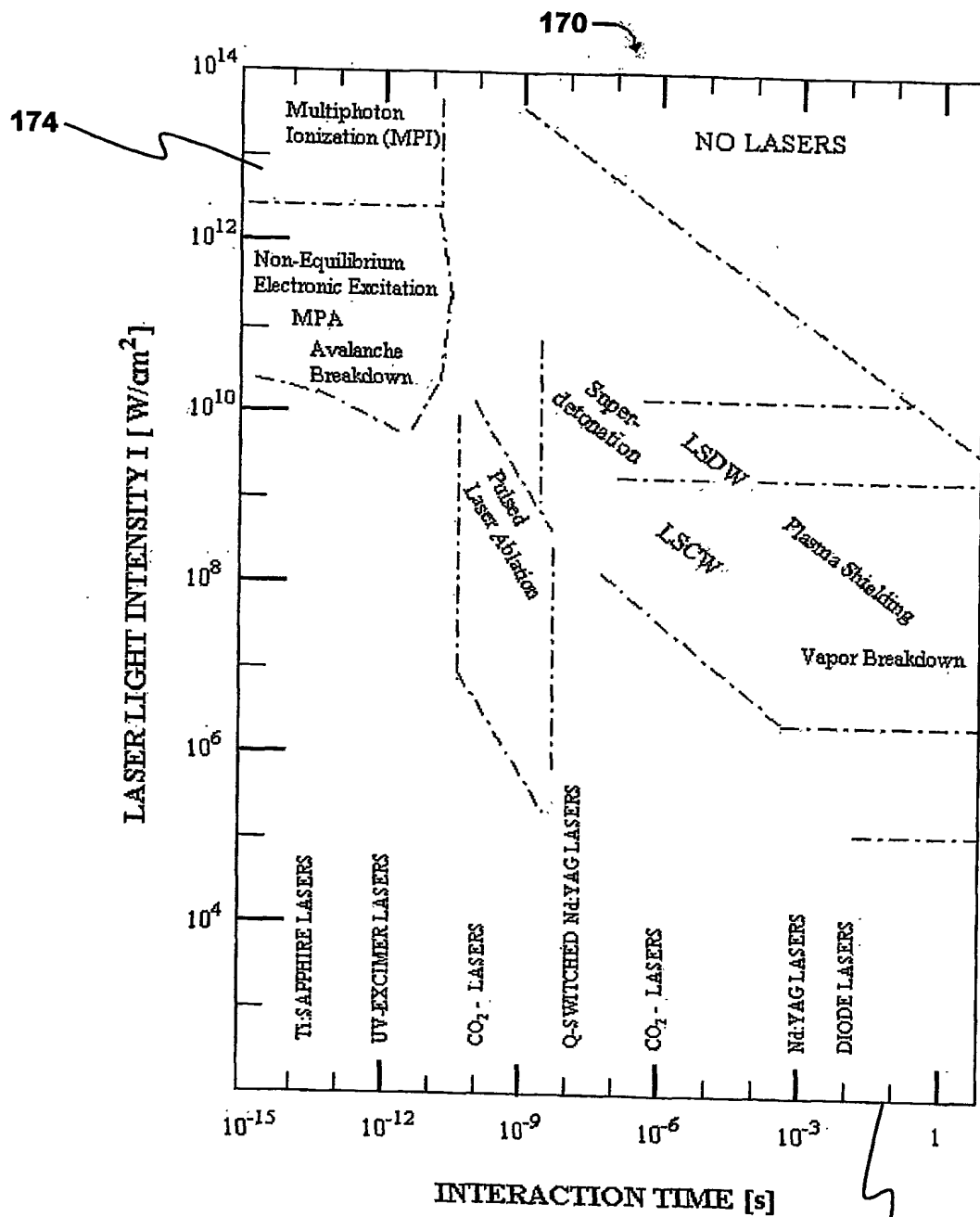


FIG. 11

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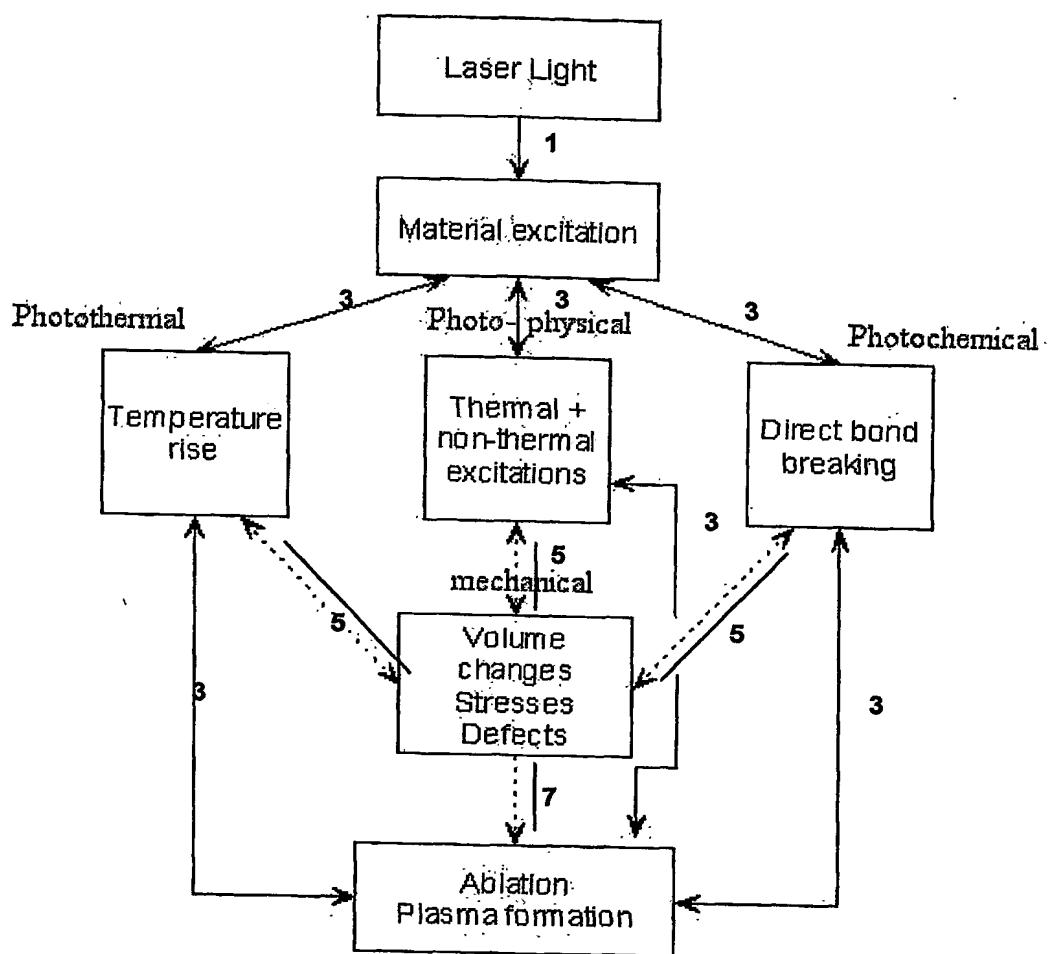


FIG. 12

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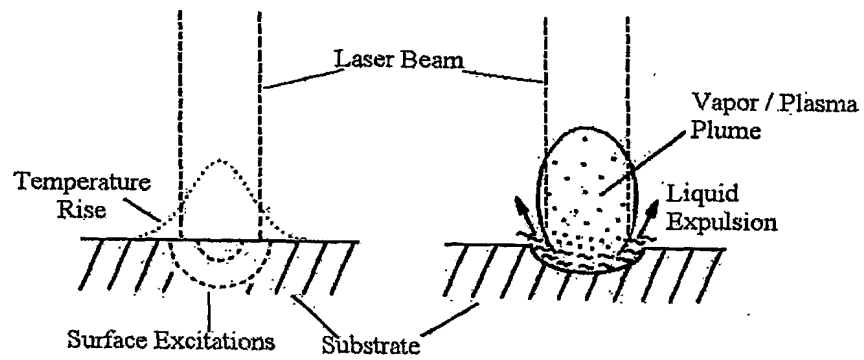


FIG. 13

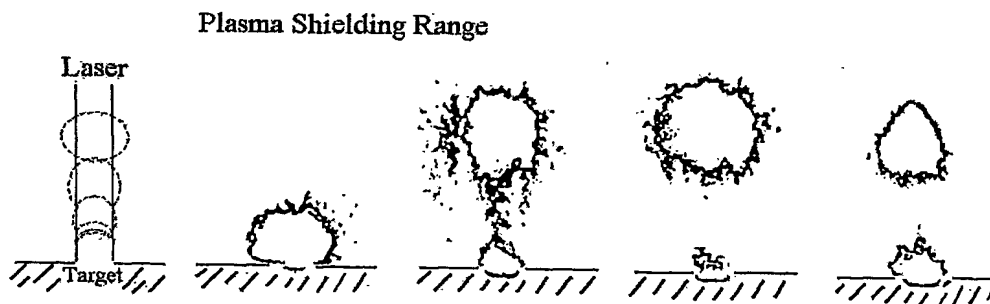


FIG. 14

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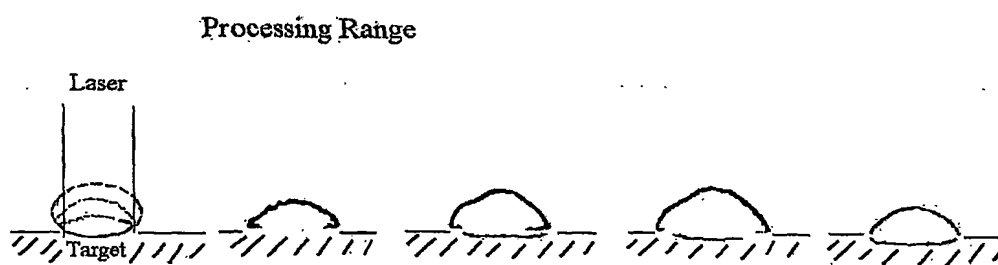


FIG. 15

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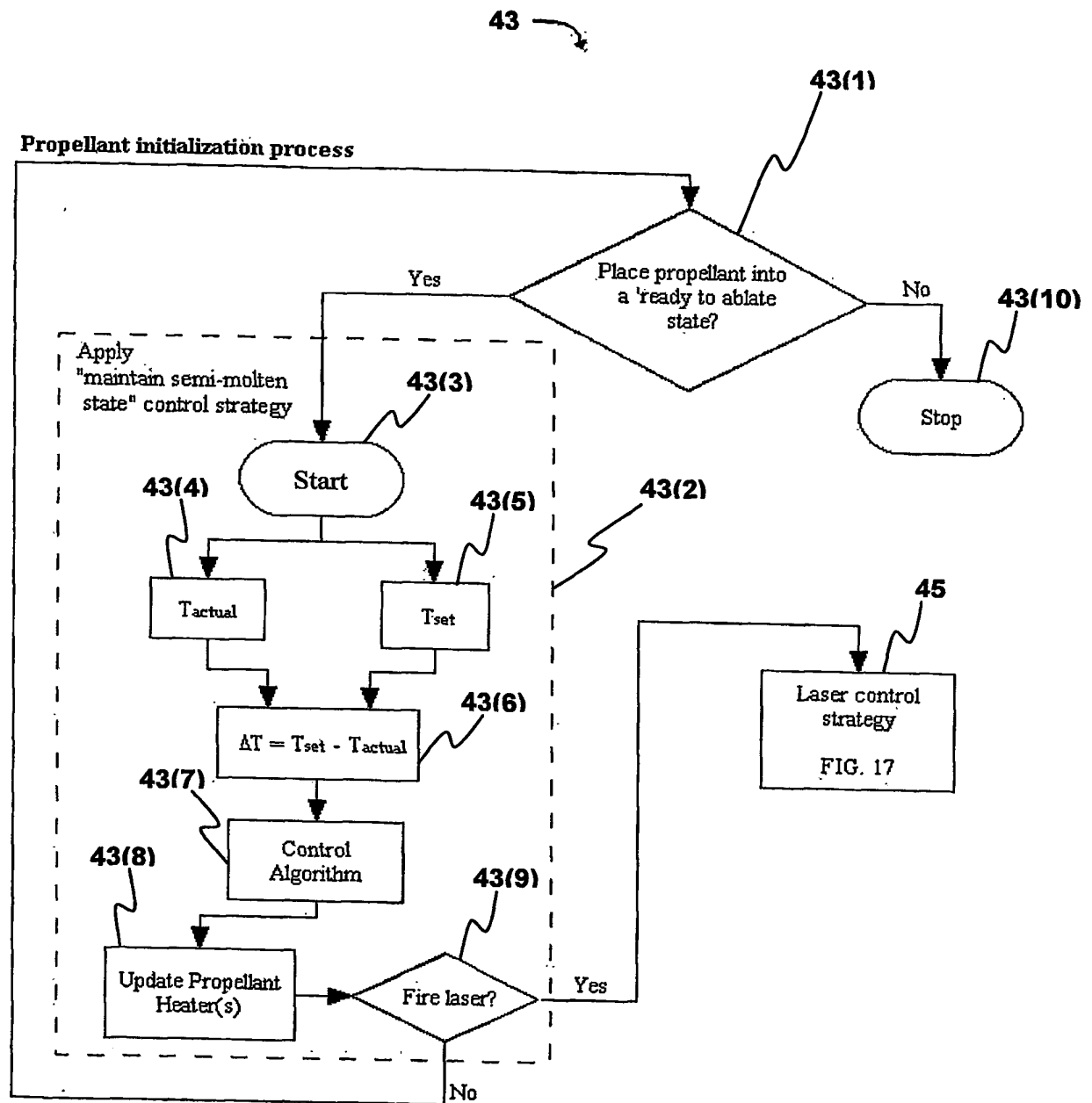


FIG. 16

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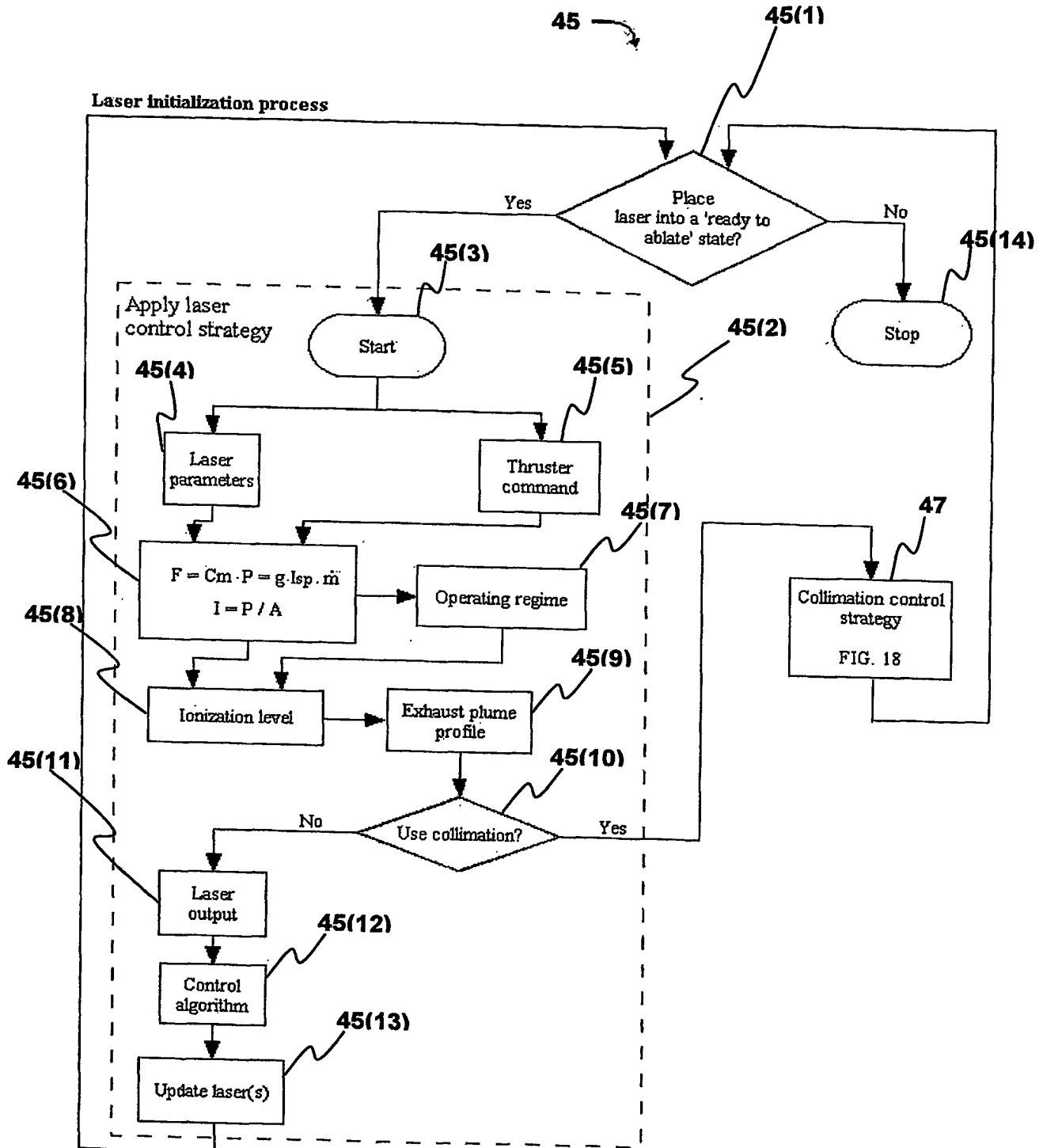


FIG. 17

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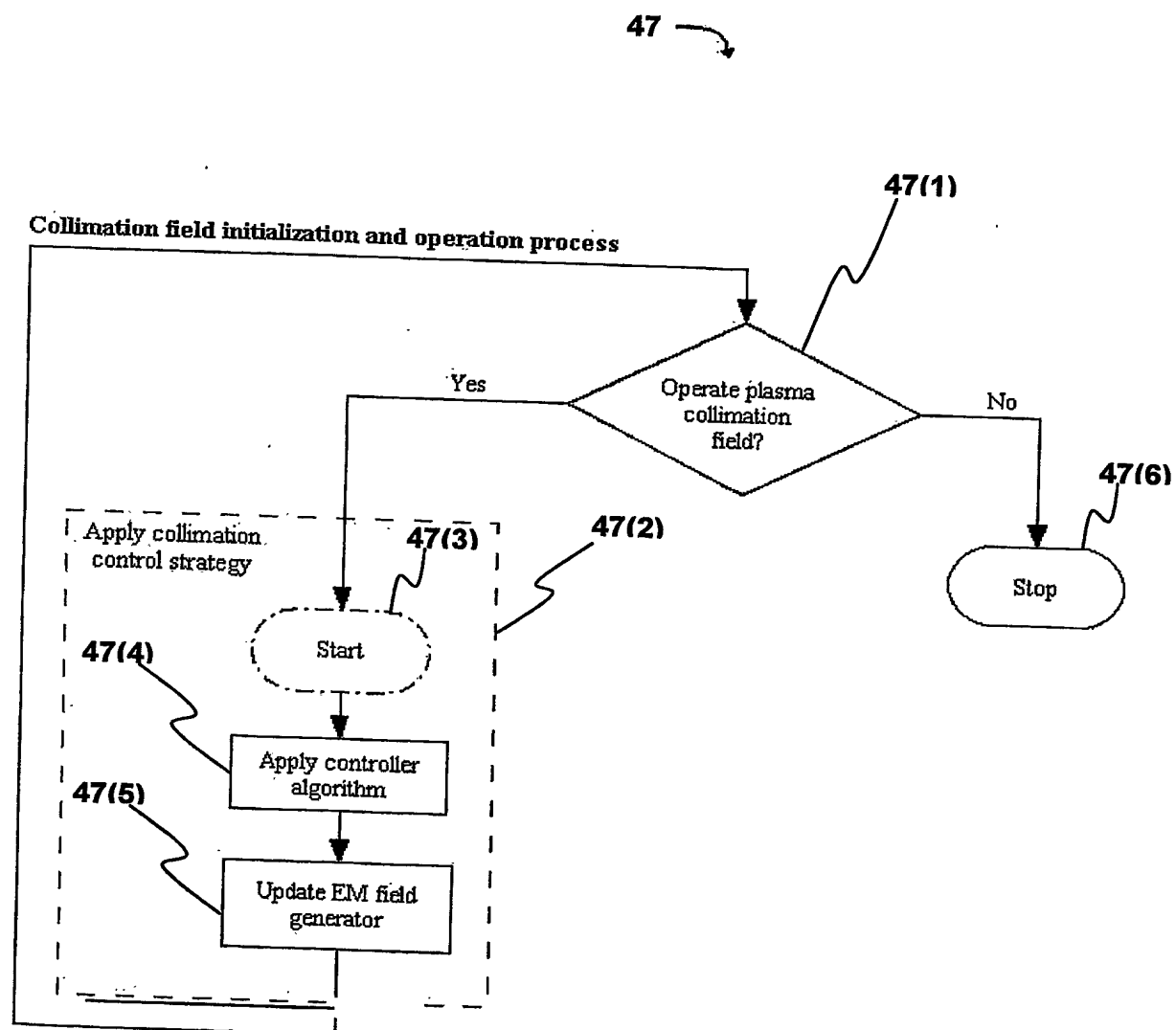


FIG. 18

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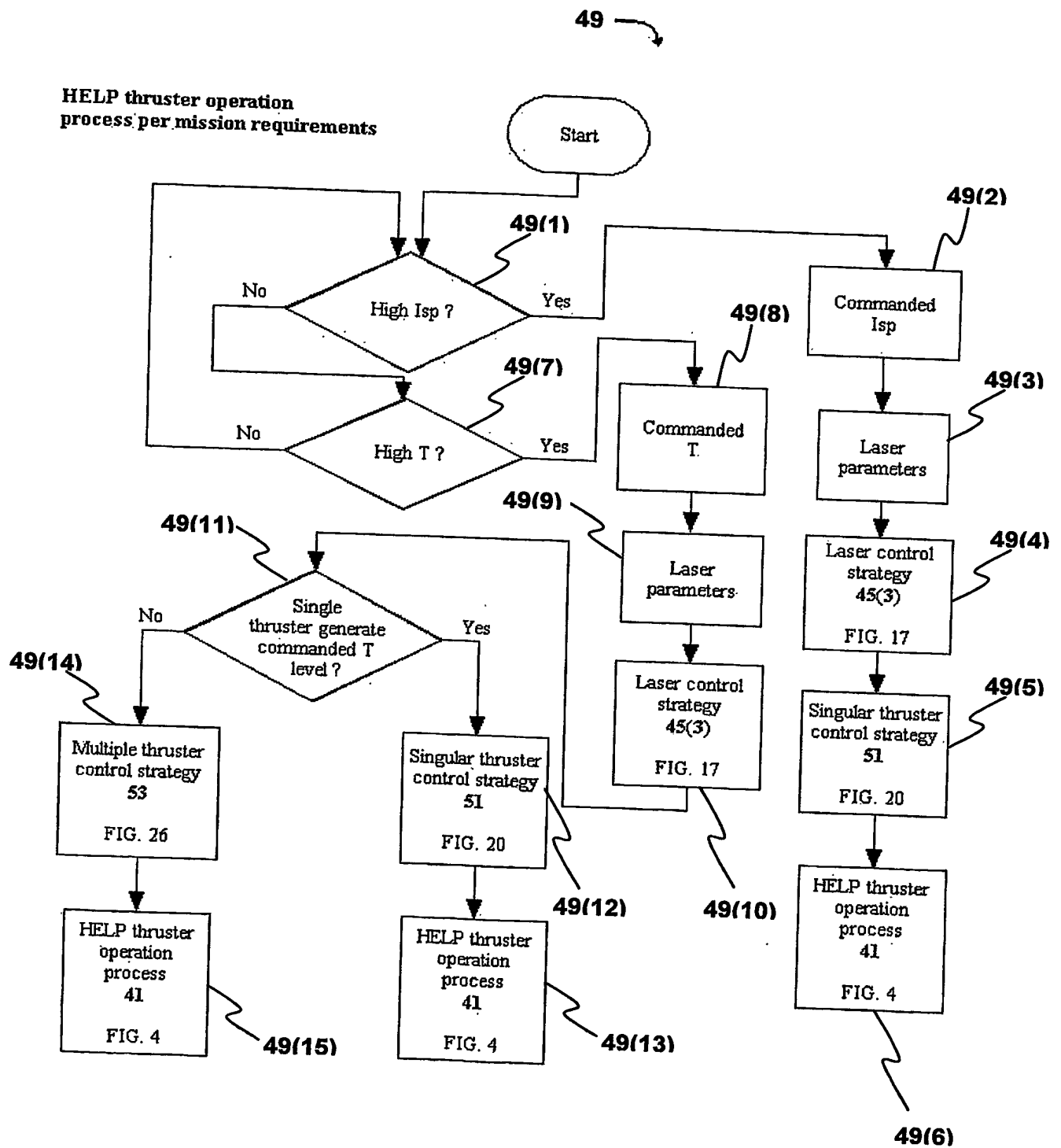
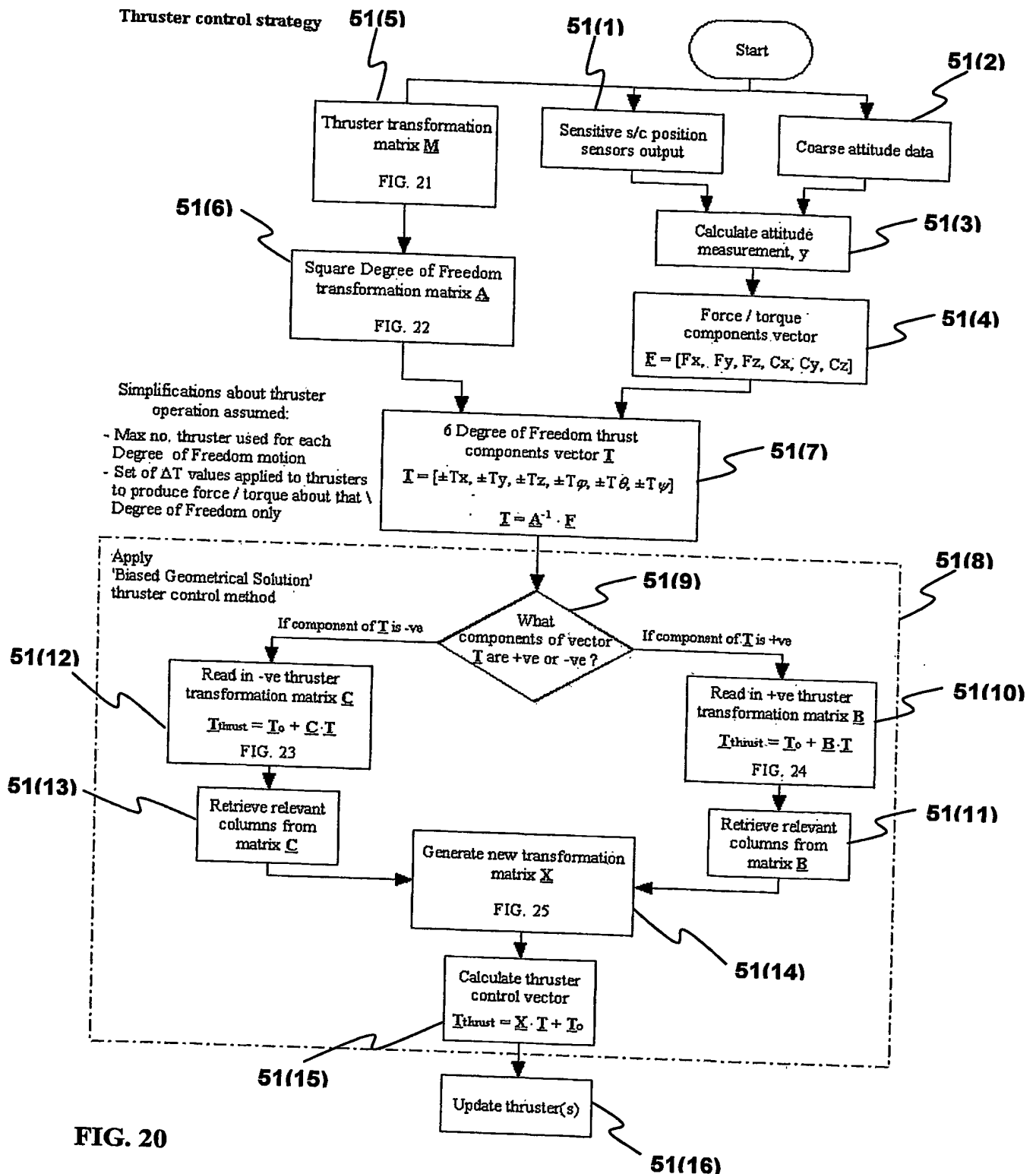


FIG. 19

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$$\underline{\mathbf{F}} = \underline{\mathbf{A}} * \underline{\mathbf{T}}$$

$\underline{\mathbf{F}}$	$\underline{\mathbf{A}}$						$\underline{\mathbf{T}}$
F_x	$(3\cos 70^\circ + 2\cos 20^\circ * \cos 30^\circ)$	0	0	0	0	0	T_x
F_y	0	$(3\cos 70^\circ + 2\cos 20^\circ * \cos 30^\circ)$	0	0	0	0	T_y
$F_z =$	0	0	$(4\cos 20^\circ)$	0	0	0	T_z
C_ϕ	0	0	0	$(2\cos 20^\circ * D + 2\cos 20^\circ * \cos 60^\circ * D)$	0	0	T_ϕ
C_θ	0	0	0	0	$(2\cos 20^\circ * D + 2\cos 20^\circ * \cos 60^\circ * D)$	0	T_θ
C_ψ	0	0	0	0	0	$(4\cos 20^\circ * \cos 60^\circ * D)$	T_ψ

FIG. 22

$$\underline{\mathbf{T}}_{\text{thrust}} = \underline{\mathbf{C}} * \underline{\mathbf{T}} + \underline{\mathbf{T}}_0$$

$\underline{\mathbf{T}}_{\text{thrust}}$	$\underline{\mathbf{C}}$						$\underline{\mathbf{T}}$	Bias thrust $\underline{\mathbf{T}}_0$
	X	y	z	ϕ	θ	ψ		$\underline{\mathbf{T}}_0$
T1	0	0.5	0	0	2	1	$-\mathbf{T}_x$	1
T2	0	0	1	0.5	0	0	$-\mathbf{T}_y$	1
T3	0	1	1	0.5	0	1	$-\mathbf{T}_z$	1
T4	0.5	1	0	2	0	0	$-\mathbf{T}_\phi$	1
T5	0	1	1	0	0.5	0	$-\mathbf{T}_\theta$	1
T6 =	1	1	1	0	0.5	1	$-\mathbf{T}_\psi$	1
T7	1	0.5	0	0	0	1		+
T8	1	1	1	0.5	1	0		1
T9	1	0	1	0.5	1	1		1
T10	0.5	0	0	0	0	0		1
T11	1	0	1	1	0.5	0		1
T12	0	0	1	1	0.5	1		1

FIG. 23

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$$\underline{T}_{\text{thrust}} = \underline{B} * \underline{T} + \underline{T}_o$$

<u>T_{thrust}</u>	<u>B</u>						<u>T</u>	<u>Bias thrust T_o</u>
	x	y	z	φ	θ	ψ		<u>T_o</u>
T ₁	1	0.5	1	0	0	1	T _x	1
T ₂	1	1	0	0.5	1	1	T _y	1
T ₃	1	0	0	0.5	1	0	T _z	1
T ₄	0.5	0	1	0	0	0	T _φ	1
T ₅	1	0	0	1	0.5	1	T _θ	1
T ₆ =	0	0	0	0.5	0.5	0	T _ψ	1
T ₇	0	0.5	1	0	2	1		+
T ₈	0	0	0	0.5	0	1		1
T ₉	0	1	0	0.5	0	0		1
T ₁₀	0.5	1	1	2	0	0		1
T ₁₁	0	1	0	0	0.5	1		1
T ₁₂	1	1	0	0	0.5	0		1

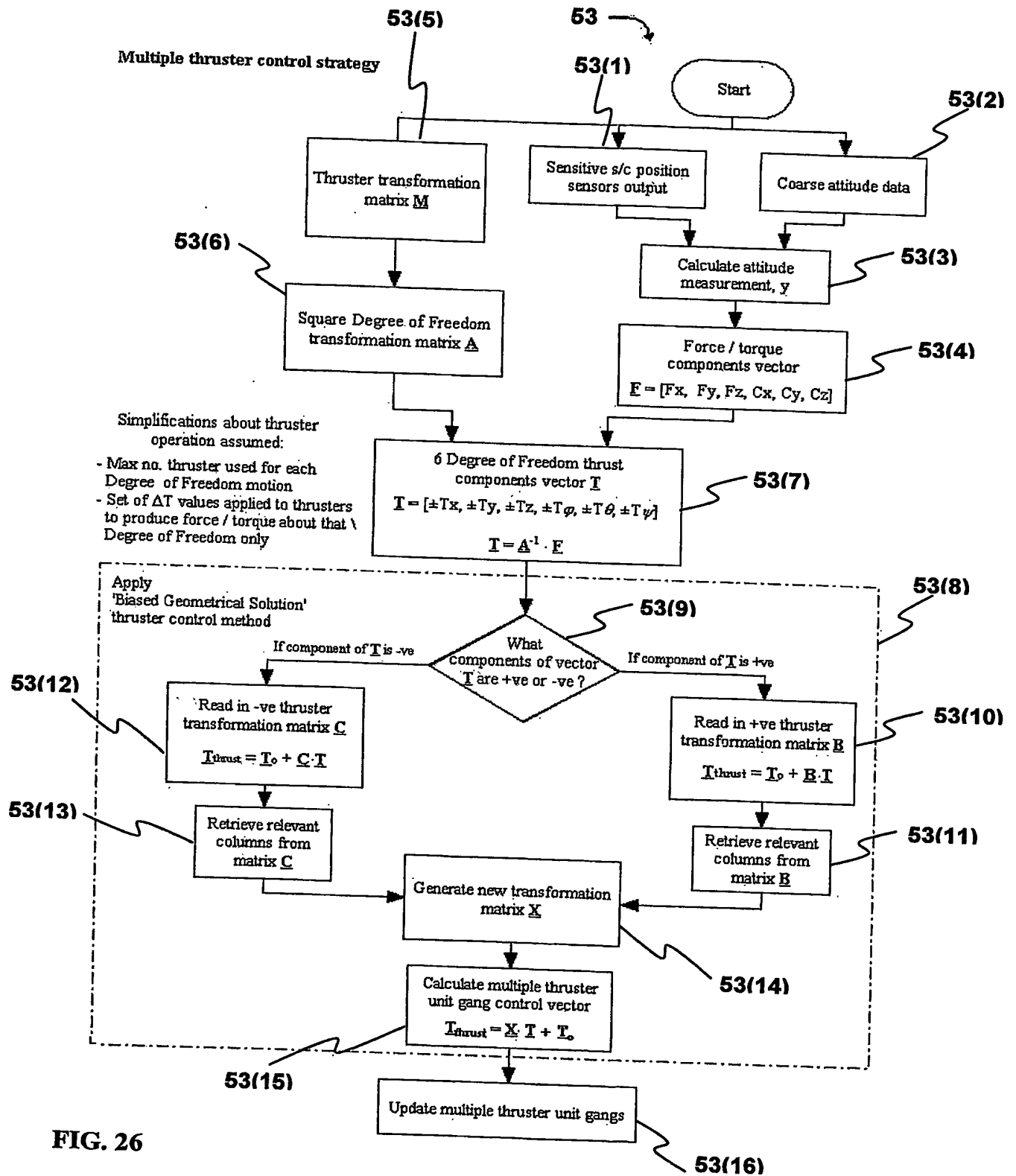
FIG. 24

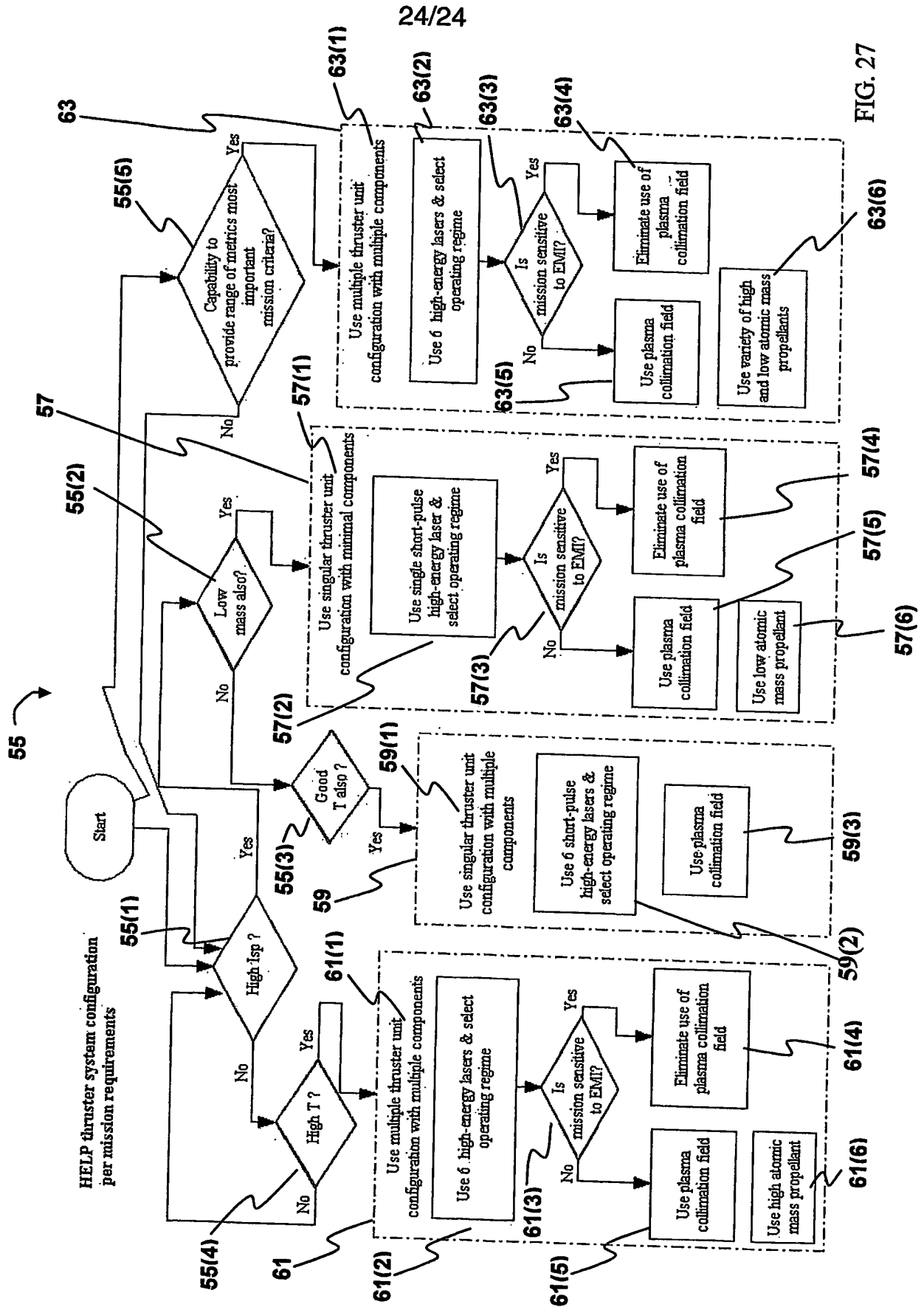
$$\underline{T}_{\text{thrust}} = \underline{X} * \underline{T} + \underline{T}_o$$

<u>T_{thrust}</u>	<u>X</u>						<u>T</u>	<u>Bias thrust T_o</u>
	x	y	z	φ	θ	ψ		<u>T_o</u>
T ₁	0	0	0	0	0	0	-T _x	1
T ₂	0	0	0	0	0	0	-T _y	1
T ₃	0	0	0	0	0	0	-T _z	1
T ₄	0.5	0	0	0	0	0	-T _φ	1
T ₅	0	0	0	0	0	0	-T _θ	1
T ₆ =	1	0	0	0	0	0	-T _ψ	1
T ₇	1	0	0	0	0	0		+
T ₈	1	0	0	0	0	0		1
T ₉	1	0	0	0	0	0		1
T ₁₀	0.5	0	0	0	0	0		1
T ₁₁	1	0	0	0	0	0		1
T ₁₂	0	0	0	0	0	0		1

FIG. 25

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